Small
Business
Innovation
Research

MINIATURE ULTRA-STABLE DIODE LASER

Environmental Optical Sensors, Inc. (EOSI)
Boulder, CO

INNOVATION

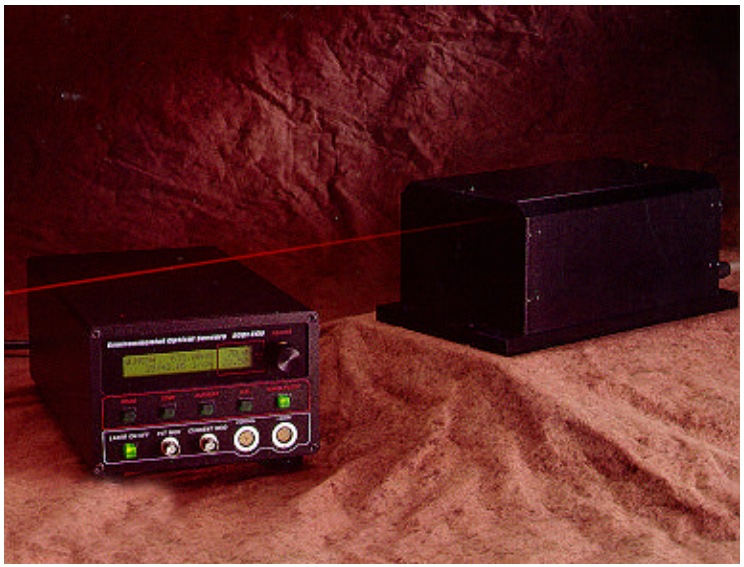
Diode laser source with long and short term stability below 100 KHz by using optical feedback from external cavity grating.

ACCOMPLISHMENTS

- Phase I resulted in a stabilized laser diode delivered to NASA including commercial quality packaged electronics.
- Phase II resulted in a miniaturized laser diode, frequency reference and control electronics the size of a cigarette pack.

COMMERCIALIZATION

- Manufacturing an external cavity diode laser that grew out of the Phase I research.
- Currently commercializing a miniaturize laser diode and electronics package designed for OEM marketplace.
- Laser offers wavelengths from 630 nm out to 2000 nm.
- 800 units have been delivered to 36 different countries for use in research and telecommunication laboratories.
- 1997 sales for this technology totaled $2.1M.
- Six full-time technical positions created.



TUNABLE LASER DIODE

GOVERNMENT/SCIENCE APPLICATIONS

- High bit rate coherent optical communication systems, passive ring cavity-type fiber gyroscopes, opticallypumped rubidium and cesium clocks.
- Precision metrology, Doppler, and the detection of pollutants and trace compounds in the atmosphere.
- Process control medical applications.
- A non-invasive procedure is being tested to measure blood oxygen in the brain.

Points of Contact:
- NASA - Dan Krebs; 301-286-3863
- EOSI - Michael Lang; 303-530-7785

Goddard Space Flight Center

1992 Phase 2, SS-129, 2/26/98